OPERATING INSTRUCTIONS FOR AMECO ALL-BAND PREAMPLIFIER MODEL PCL-P

The Ameco Model PCL-P Preamplifier is a unit which can be added to existing receivers to improve their gain, noise figure, spurious signal rejection and image rejection. The PCL-P is a tuned RF amplifier covering all frequencies from 1.8 to 54 Mc., including amateur bands 160 through 6 meters, all foreign broadcast bands and other services within this frequency range. It uses two Nuvistors in cascode and gives noise figures from 1.5 to 3.4 db., depending on frequency. Weak signal performance of all receivers will be improved. The gain of the PCL-P exceeds 20 db.

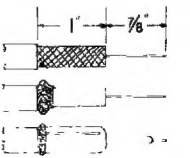
The Model PCL-P operates from any 117 volt 60 cycle AC outlet.

The input impedance is nominally 50 to 75 ohms to match the most popular types of antennas. Long wire, 300 ohm and random length antennas can also be used with good results. Antenna and output jacks are Motorola auto radio type.

Operation is as follows: One switch is used to turn the power on. The other switch, marked PREAMP, connects the PCL-P between the antenna and the receiver in the IN position, disconnects the Preamp and feeds the signal directly from the antenna to the receiver in the OUT position. The band of frequencies is selected by the RANGE knob. The Preamp is peaked to the signal you have tuned in on the receiver by the TUNING knob. Detailed operating instructions are in OPERATION paragraph, below.

INSTALLATION

To install the PCL-P, the antenna is connected with a "Motorola" auto radio plug to the antenna jack of the Preamplifier. A short length of coaxial cable and another Motorola plug is used to carry the signal from the Preamplifier to the receiver, transceiver or converter antenna terminals. The coaxial cable is connected to a Motorola plug in the following manner:



Remove outer vinyl covering for 1-7/8".
Strip braid and inner insulation off center conductor for 7/8".
Push braid back to form a bead all around.
Insert center conductor through pin until braid is against end of plug.
Bend center conductor to hold plug in place.
Roll braid between fingers to roll it over the end of the plug for about 1/16".
Solder the braid to the four tabs of the plug.
Solder the center conductor to the pin and cut off excess wire.

OPERATION

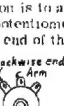
To operate the receiver normally, leave the POWER switch on the PCL-P in the OFF position and the PREAMP switch in the OUT position.

To operate the receiver with the PCL-P:

1. Shift the POWER switch of the PCL-P to the ON position and the PREAMP switch to the IN position.
2. Turn the RANGE switch to a position that includes the desired frequency. For example: the 20 meter Amateur Band is 14 to 14.35 Mc. This is between 10 and 23, therefore, the range switch must be at the line between 10 and 23.
3. When a signal is received, peak it by adjusting the TUNING knob for maximum swing on the receiver S-Meter or maximum volume if no meter is used. In tuning over a band, the TUNING knob of the PCL-P should be adjusted fairly frequently. For instance, at 4 Mc., it may have to be adjusted every 50 Kc. At 50 Mc. it may have to be adjusted every 200 Kc.
4. When the Preamp is to be left in the standby condition (not in use, but ready to work without waiting for it to heat up), set the PREAMP switch in the OUT position, and leave the POWER switch ON.

AGC (AVC): AGC is not recommended for the PCL-P.

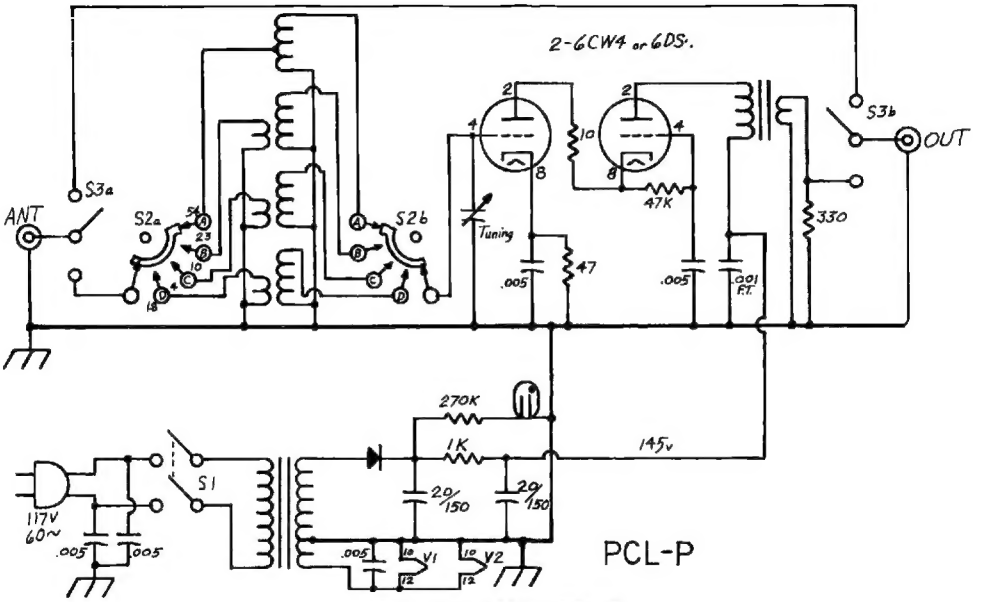
Because the PCL-P adds considerable gain to a system, which often has more than sufficient gain already, overloading of subsequent stages can be a problem. The simplest method of correction is to add a gain control. To add a manual gain control to a PCL-P Preamplifier, obtain a 10,000 ohm potentiometer. Lift the grounded end of the 47 ohm resistor from the chassis and connect it to the clockwise end of the control. (See sketch). Connect the arm (center terminal) of the control to the chassis.



Note that when this control is at the maximum clockwise position, there is no change in performance of the PCL-P. When this control is turned down (counterclockwise), the PCL-P will tolerate much stronger signals, but the weak signal performance will not be as good. Therefore, for normal operation, leave the control full on and back it off only to reduce interference from very strong signals.

ALIGNMENT

The PCL-P Preamplifier has no adjustments. All tuning is done by the variable condenser.



Schematic of Model PCL-P.

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